
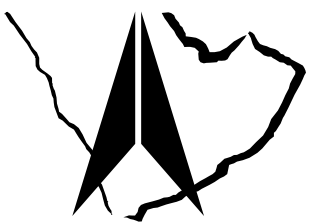
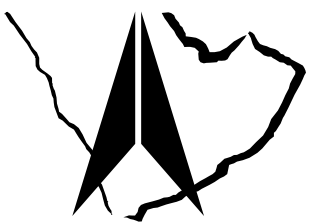
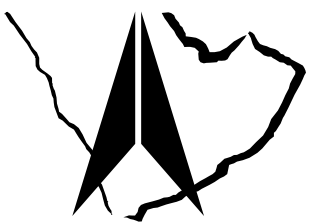


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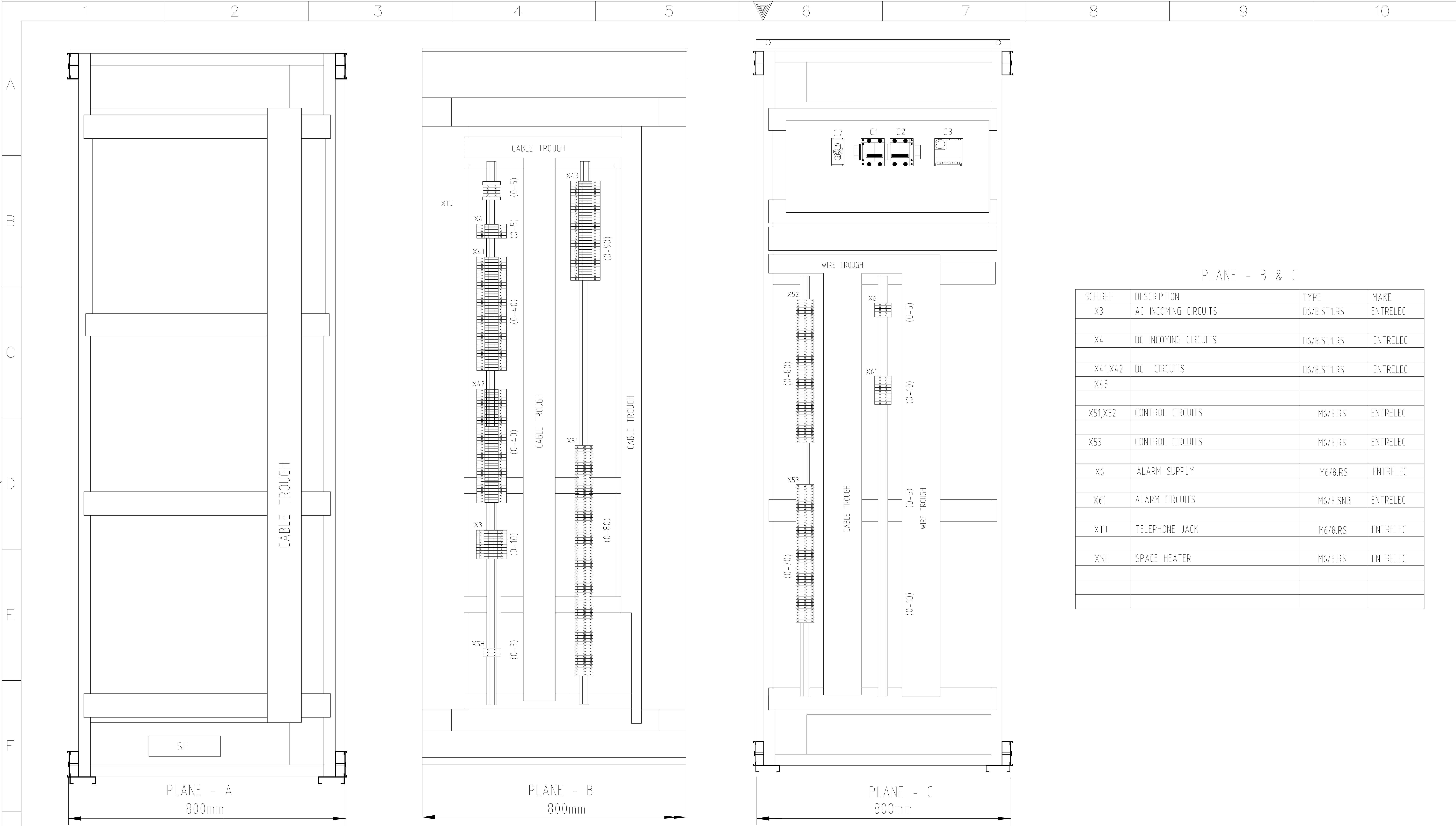


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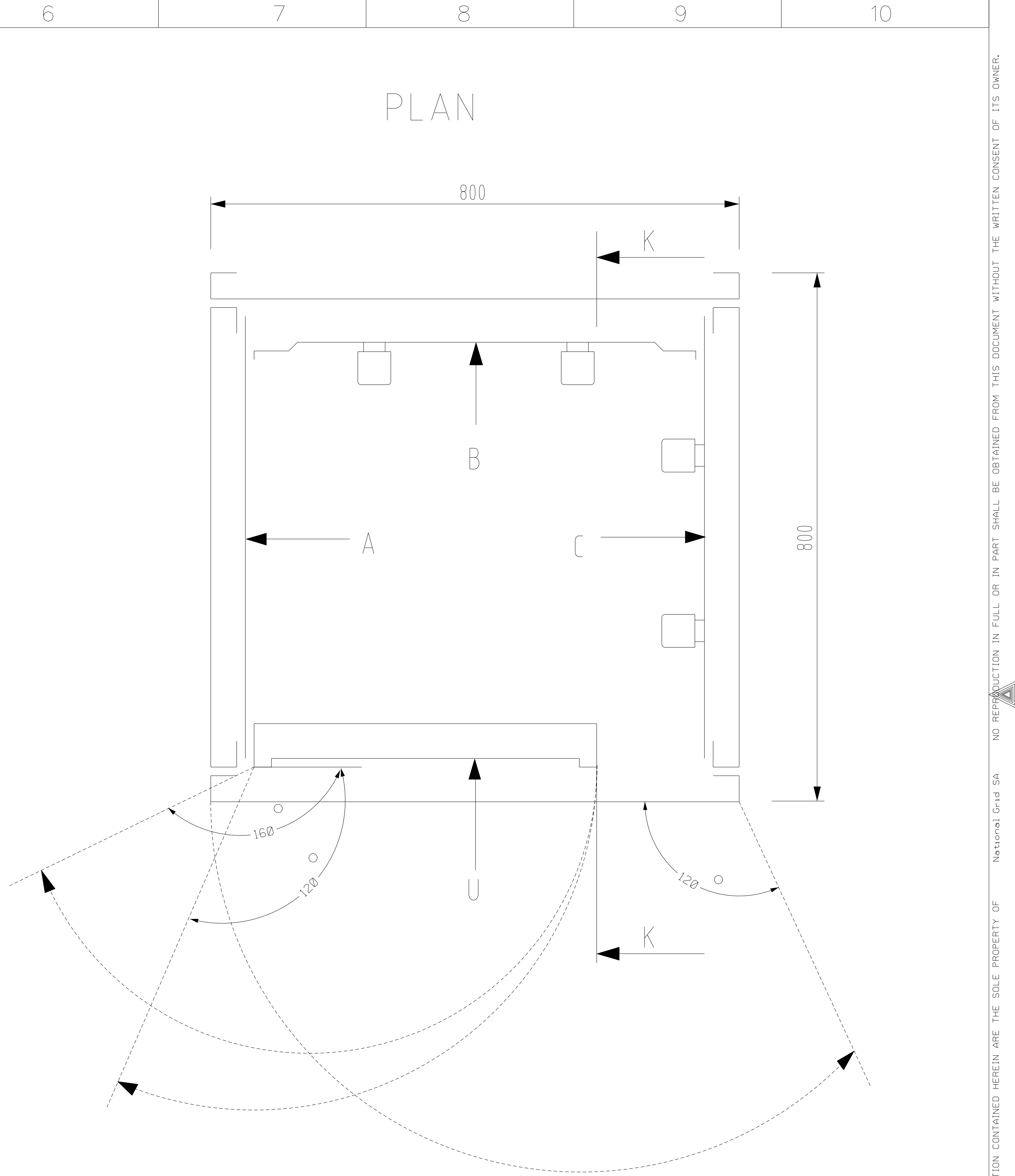
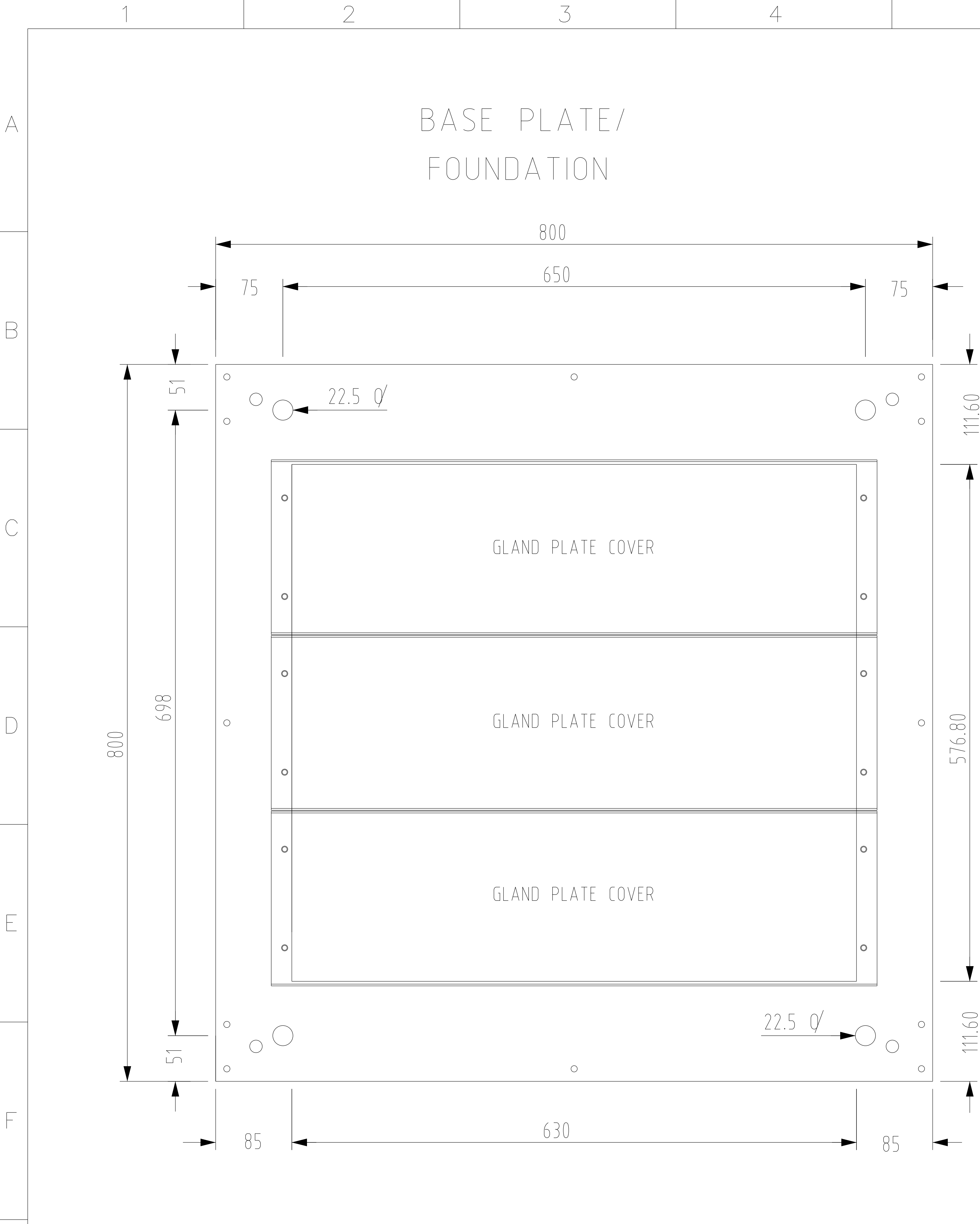
NG/D2-D (2012/01)



PLANE - B & C

SCH.REF	DESCRIPTION	TYPE	MAKE
X3	AC INCOMING CIRCUITS	D6/8.ST1.RS	ENTRELEC
X4	DC INCOMING CIRCUITS	D6/8.ST1.RS	ENTRELEC
X41,X42	DC CIRCUITS	D6/8.ST1.RS	ENTRELEC
X43			
X51,X52	CONTROL CIRCUITS	M6/8.RS	ENTRELEC
X53	CONTROL CIRCUITS	M6/8.RS	ENTRELEC
X6	ALARM SUPPLY	M6/8.RS	ENTRELEC
X61	ALARM CIRCUITS	M6/8.SNB	ENTRELEC
XTJ	TELEPHONE JACK	M6/8.RS	ENTRELEC
XSH	SPACE HEATER	M6/8.RS	ENTRELEC

G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		ASSEMBLY DRAWING		<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>						
					DRAWN BY _____ RIZ _____ CHECKED BY _____ JKR		SAS INTERFACE PANEL +SAS I/F-1								
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	REV. NO.	DATE	DESCRIPTION										G02	G03	



AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

ASSEMBLY DRAWING

SAS INTERFACE PANEL +SAS I/F-1

S/S 8709 S-13656

RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



National Grid sa

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

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CONT.

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CD-322985

G03

G04

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AS MANUFACTURED

DRAWN BY RIZ CHECKED BY JKR

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FOR APPROVAL

DATE STARTED 15.3.2013 DATE COMPLETED _____

REV. NO.

DATE

DESCRIPTION

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

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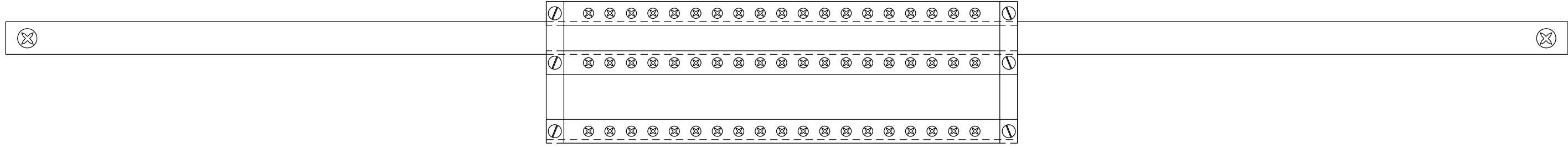
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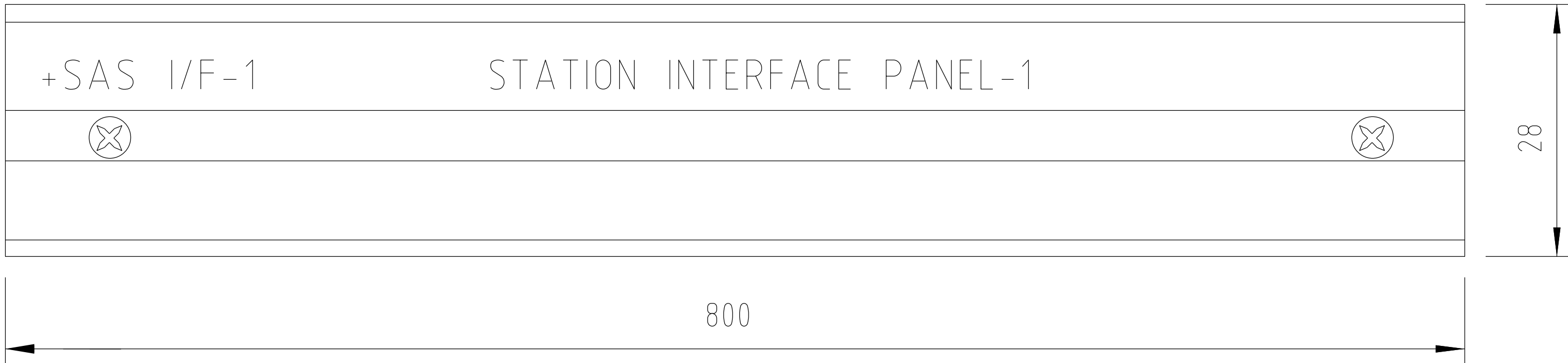
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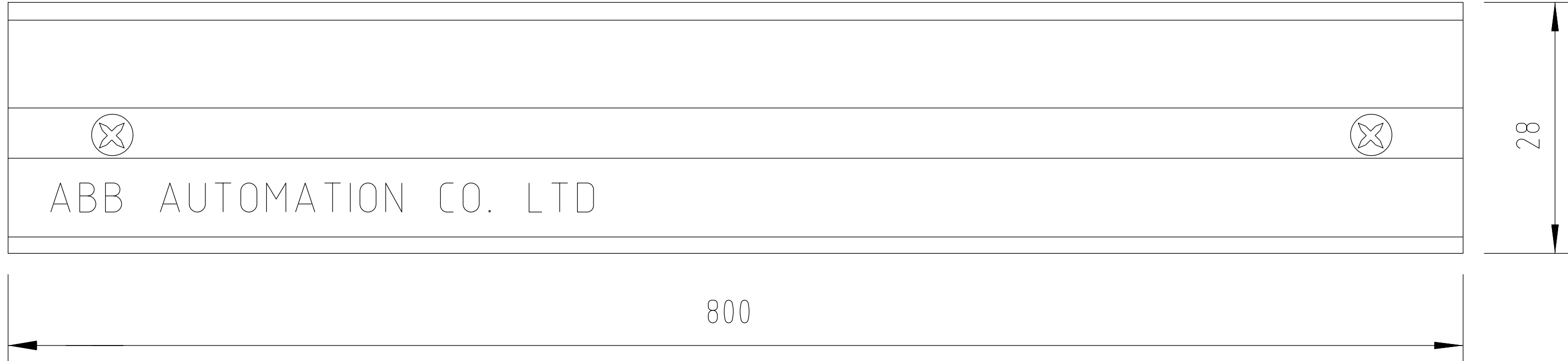


TOP VIEW FOR EARTHING BAR

U PLANE TOP LABEL



U PLANE BOTTOM LABEL



MANUFACTURING LABEL

ABB ABB Automation Co.Ltd.

PROJECT : National Grid SA - S/S 8709

ORDER REFERENCE : 2875 RF S13656

YEAR OF MANUFACTURE : 2013

PANEL NO. : +SAS I/F-1

DRAWING NO. : S13656-CD-322986

MADE IN THE KINGDOM OF SAUDI ARABIA

AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

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00	13 20	FOR APPROVAL
REV. NO.	DATE	DESCRIPTION

DRAWN BY RIZ	CHECKED BY JKR
DATE STARTED 15.3.2013	DATE COMPLETED
OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC

ASSEMBLY DRAWING	
SAS INTERFACE PANEL +SAS I/F-1	
S/S 8709	S-13656
RIYADH	SAUDI ARABIA


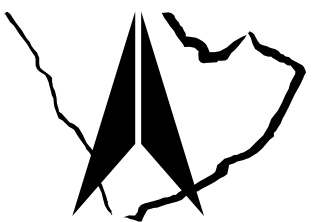
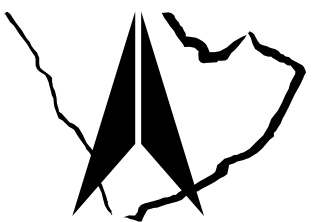
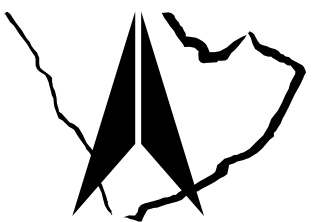
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INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
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P	C421	CD-322985	G04	L00	01

NG/D2-D (2012/01)

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	SR. NO.	GA REF.	SCH. REF.	D E S C R I P T I O N		SHEET NO.	QTY.	TYPE	MAKE	ORDERING INFORMATION	COUNTRY OF ORIGIN	
				STATION INTERFACE PANEL-1								
	1	U05.5001	A1	STATION COMMON ALARM SWITCHING EQUIPMENT WITH FOLLOWING SPECIFICATION		291 TO 296	1	REC 670	ABB	1MRK 002814-AC	SWEDEN	
				AUX : EL=90-250V DC								
				FREQ : 50/60HZ								
				BINARY INPUT : 14 NOS(PER CARD 16 INPUTS RL=110-125DC)								
B	2	U11.101	TS-1	TEST SWITCH FOR REC 670 (A1)		245	1	RTXP18	ABB	RK 926 115-AN	SWEDEN	
	3	U27.101	74IF	DUAL TARGET RELAY (REVERSE FLAG) (A1 DC FAIL/SPARE)		245	1	RXSF1	ABB	RK 271 019 AN	SWEDEN	
				CONTACTS :1NO+2NC PER COIL								
				AUX.VOLT :1NO+2NC PER COIL								
				FLAG :SELF RESET								
C	4			MCB 2 POLE 6A, FOR DC SUPPLY WITH 2NC AUXILIARY CONTACT		216	1	S 282 UC-K6	ABB	GH S282 0164 R0377	GERMANY	
		U39.5001	Q1	Q1 IF+ SUPPLY				S2-H02		GH S270 1916 R0003		
											FRANCE	
	5	U39.5002	C01	CONVENIENCE OUTLET 10A, 127V AC		211	1	USM45 &	LEGRAND	74140 & 74180		
			C02	CONVENIENCE OUTLET 10A, 220V AC				USMS45				
			C1,C2	MINIATURE CIRCUIT BREAKER, 2 POLE, 10A FOR CONVENIENCE OUTLET WITH AUXILIARY SWITCH, 1NO + 1NC CONTACTS		211	2	S202P-K10	ABB	2CDS 253 001 R0104	GERMANY	
								S2C-H11L		2CDS 200 936 R0001		
D	6		C3	THERMOSTAT FOR SPACE HEATER, 5-60 C		211	1	SK 3110	RITTAL	SK 3110	THIWAN	
	7	U39.5003	TJ	TELEPHONE JACK 1GANG 4WIRE		211	1	EDF410	EDISON	EDF410	SWEDEN	
	8		C7	ON/OFF SWITCH FOR SPACE HEATER		211	1	M2SS1-10B	ABB	1SFA 611 200 R1006		
								MCBH-10		1SFA 611 605 R1101		
	9		DS	DOOR SWITCH FOR CONTROL OF CUBICLE INTERNAL ILLUMINATION LAMP		211	1	LS30P	ABB	1SBV 010213 R1202	SWEDEN	
	10			INTERNAL ILLUMINATION CUBICLE LAMP SUITABLE FOR 127V AC, 60Hz SUPPLY, 20W		211	1	T-4	SUNON	SP-20W		
	11		SH	SPACE HEATER, 150W, 120V, 60Hz		211	1	MICA	GRUPPO	1FZEK 006 C001	ITALY	
F												
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							P	C421	CD-322985		SHT L01	CONT. L02
												01



الشركة الوطنية لنقل الكهرباء

SHEET NO.	REV. NO.
SHT	CONT.
L01	L02
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NG/D2-D (2012/01)

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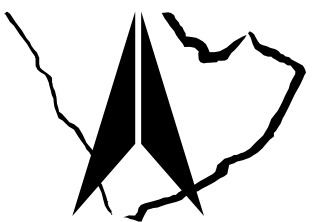
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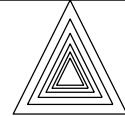
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D	<table><thead><tr><th>LABEL REF.</th><th>LABEL ENGRAVING</th><th>MATERIALS</th><th>ENGRAVING</th><th>LABEL SIZE</th><th>LETTER SIZE</th></tr></thead><tbody><tr><td>C1</td><td>C1 127V AC SUPPLY MCB</td><td>TRAFOLITE</td><td>BLACK LETTERS ON WHITE BACKGROUND</td><td>50X15mm</td><td>4 mm</td></tr><tr><td>C2</td><td>C2 220V AC SUPPLY MCB</td><td>TRAFOLITE</td><td>BLACK LETTERS ON WHITE BACKGROUND</td><td>50X15mm</td><td>4 mm</td></tr><tr><td>C3</td><td>C3 THERMOSTAT</td><td>TRAFOLITE</td><td>BLACK LETTERS ON WHITE BACKGROUND</td><td>50X15mm</td><td>4 mm</td></tr><tr><td>C7</td><td>C7 ON/OFF SWITCH</td><td>TRAFOLITE</td><td>BLACK LETTERS ON WHITE BACKGROUND</td><td>50X15mm</td><td>4 mm</td></tr><tr><td>DS</td><td>DS DOOR SWITCH</td><td>TRAFOLITE</td><td>BLACK LETTERS ON WHITE BACKGROUND</td><td>50X15mm</td><td>4 mm</td></tr><tr><td>IL</td><td>IL ILLUMINATION LAMP</td><td>TRAFOLITE</td><td>BLACK LETTERS ON WHITE BACKGROUND</td><td>50X15mm</td><td>4 mm</td></tr><tr><td>SH</td><td>SH SPACE HEATER</td><td>TRAFOLITE</td><td>BLACK LETTERS ON WHITE BACKGROUND</td><td>50X15mm</td><td>4 mm</td></tr></tbody></table>										LABEL REF.	LABEL ENGRAVING	MATERIALS	ENGRAVING	LABEL SIZE	LETTER SIZE	C1	C1 127V AC SUPPLY MCB	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4 mm	C2	C2 220V AC SUPPLY MCB	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4 mm	C3	C3 THERMOSTAT	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4 mm	C7	C7 ON/OFF SWITCH	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4 mm	DS	DS DOOR SWITCH	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4 mm	IL	IL ILLUMINATION LAMP	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4 mm	SH	SH SPACE HEATER	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4 mm
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E																																																										
F																																																										
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		LIST OF APPARATUS		<div>الشركة الوطنية لنقل الكهرباء National Grid sa</div>																																																	
	01	13 48	AS MANUFACTURED		DRAWN BY RIZ CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1		<table><tr><td>INDEX</td><td>PLANT NO.</td><td>DRAWING NUMBER</td><td colspan="2">SHEET NO.</td><td>REV. NO.</td></tr><tr><td>P</td><td>C421</td><td>CD-322985</td><td>SHT</td><td>CONT.</td><td>01</td></tr></table>		INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.	P	C421	CD-322985	SHT	CONT.	01																																				
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.																																																					
P	C421	CD-322985	SHT	CONT.	01																																																					
	00	13 20	FOR APPROVAL		DATE STARTED 15.3.2013 DATE COMPLETED _____		S/S 8709 S-13656																																																			
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA																																																			

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	1	2	3	4	5	6	7	8	9	10
A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD., 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A		
B										
C	CONTRACTOR : ABB Contracting Company									
D	CLIENT : National Grid SA									
E	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 8709 IN AL-KHARJ CITY									
F	SUBSTATION : S/S 8709									
	CONTRACT NO. : 11131113/00									
	TITLE : Schematic Drawing +SAS I/F-1									
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET		<div>الشركة الوطنية لنقل الكهرباء</div> <div> نقل الكهرباء National Grid SA</div>	
	01	13 48	AS MANUFACTURED		DRAWN BY <u>RIZ</u> CHECKED BY <u>JKR</u>		SAS INTERFACE PANEL +SAS I/F-1		INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.	
	00	13 20	FOR APPROVAL		DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____		S/S 8709 S-13656		SHT CONT. 01	
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH SAUDI ARABIA		P C421 CD-322986 000 001	

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DMS

VECTOR

NG/D2-D (2012/01)

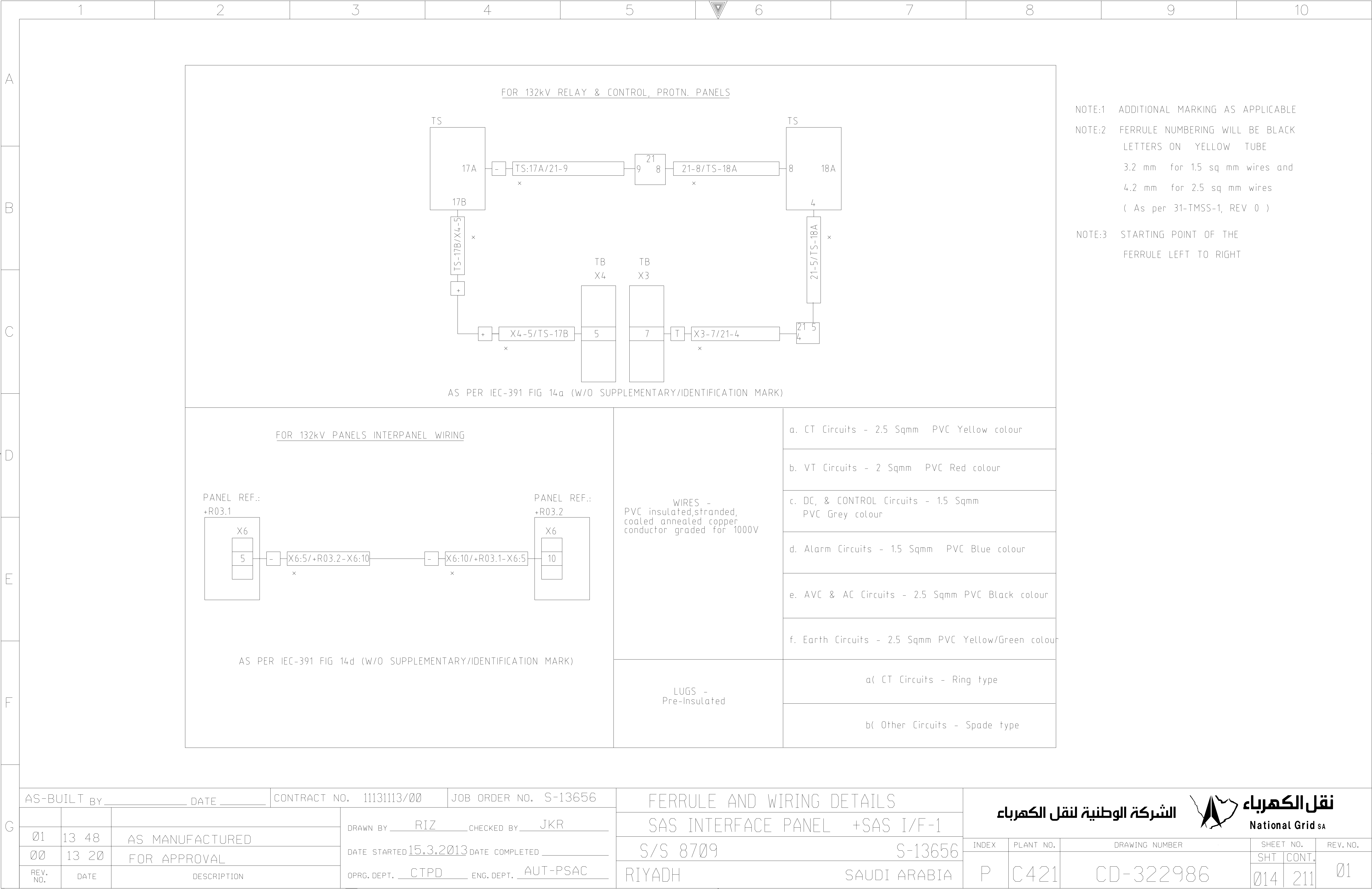
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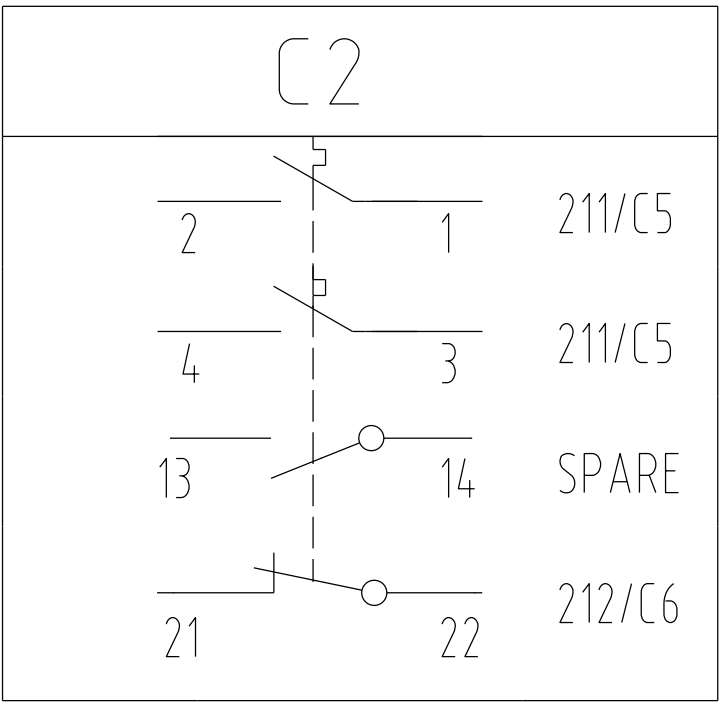
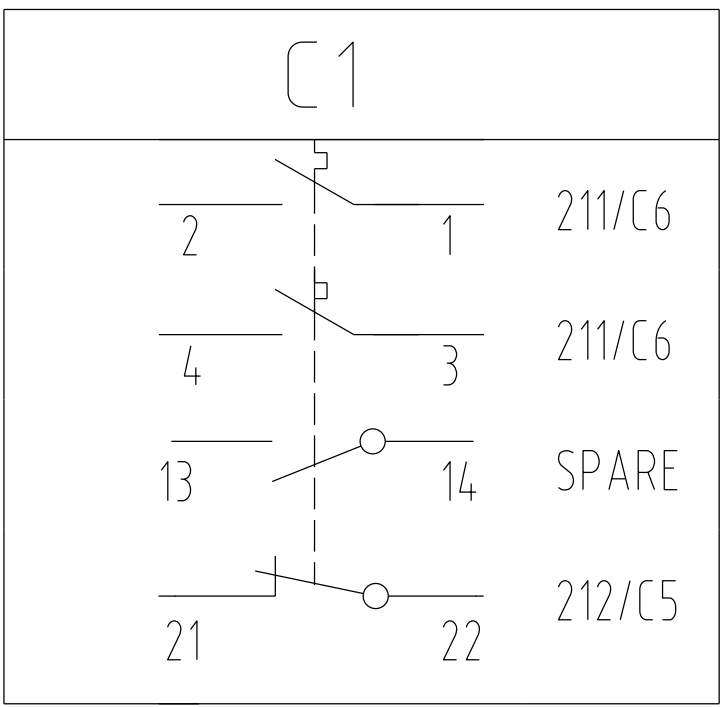
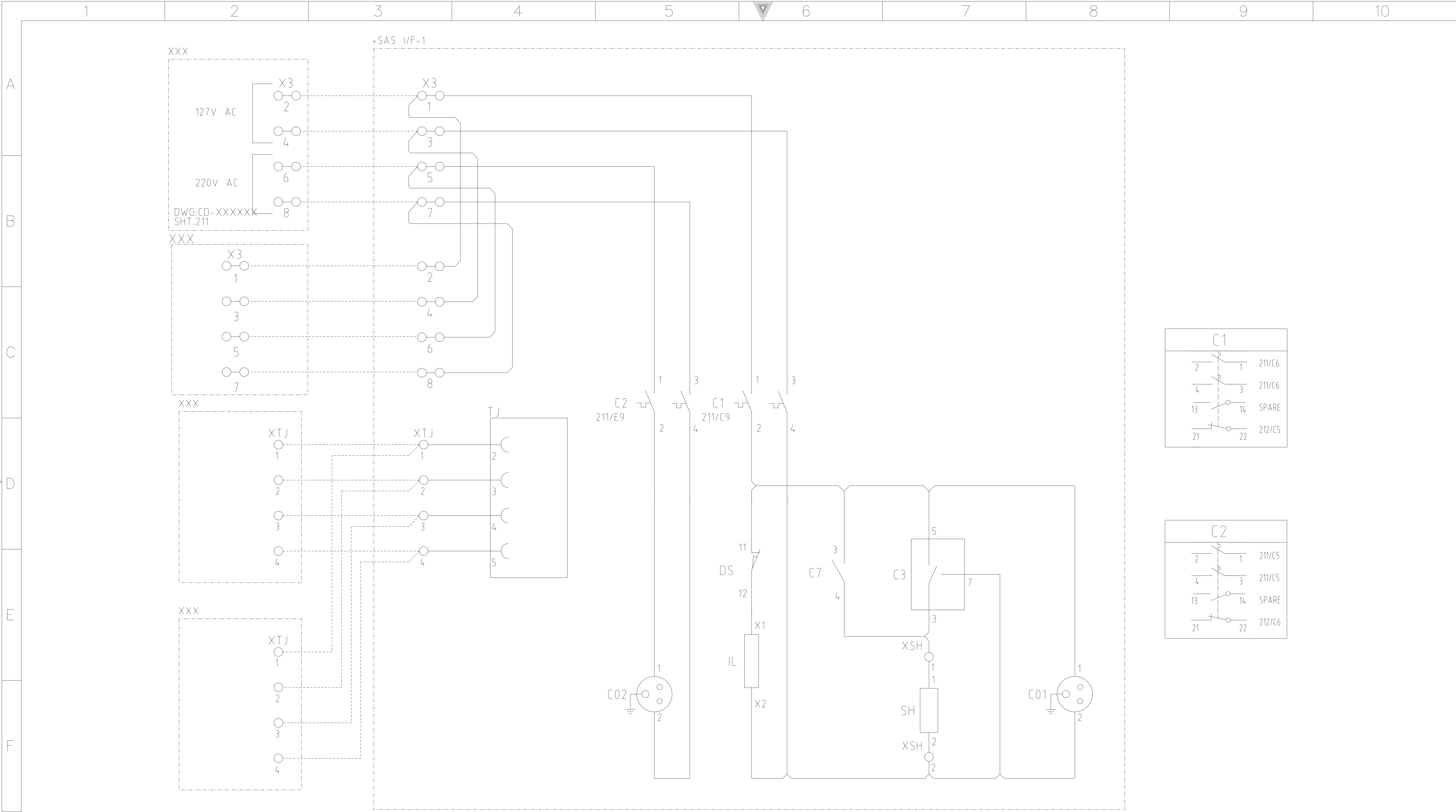
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B																			
C																			
D																			
E																			
F																			
G																			

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FUSE / LINK		WATTMETER		ELEMENT WITH NEGATED INHIBITING INPUT
	FUSE WITH THE SUPPLY SIDE INDICATED		VARMETER		ELEMENT WITH INPUT WHICH DOES NOT CARRY ANY LOGIC INFORMATION
	SINGLE-PHASE TRANSFORMER WITH TWO SEPARATE WINDINGS (TWO ALTERNATIVE FORMS)		POWER FACTOR METER		ELEMENT WITH POSTPONED OUTPUT
	SINGLE-PHASE TRANSFORMER WITH THREE SEPARATE WINDINGS (TWO ALTERNATIVE FORMS)		POSITION INDICATOR		AND-ELEMENT WITH TWO INPUTS
	SINGLE-PHASE TRANSFORMER WITH FERRO MAGNETIC CORE		SYNCHROSCOPE		OR-ELEMENT WITH TWO INPUTS
	SINGLE-PHASE VOLTAGE TRANSFORMER (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		RECORDING VOLTMETER		LOGIC THRESHOLD ELEMENT WITH FOUR INPUTS AND THRESHOLD VALUE 2
	SINGLE-PHASE VOLTAGE TRANSFORMER WITH TWO SECONDARY WINDINGS (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		RECORDING WATTMETER		ELEMENT WITH THREE INPUTS FOR "2 AND ONLY 2"
	CURRENT TRANSFORMER (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		HOUR METER		EXCLUSIVE OR-ELEMENT WITH THREE INPUTS
	CURRENT TRANSFORMER WITH TWO CORES (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		WATT-HOUR METER		LOGIC IDENTITY ELEMENT WITH THREE INPUTS
	CURRENT TRANSFORMER WITH TWO SECONDARY WINDINGS ON ONE CORE (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		WATT-HOUR METER FOR ENERGY FROM A BUSBAR SYSTEM		MAJORITY ELEMENT WITH THREE INPUTS
	FILTER		ELEMENT WITH STATIC INPUT		NEGATOR
	HIGH-PASS FILTER		ELEMENT WITH STATIC NEGATED INPUT		NAND ELEMENT WITH TWO INPUTS
	BAND-PASS FILTER		ELEMENT WITH STATIC NEGATED OUTPUT		NOR ELEMENT WITH TWO INPUTS
	VOLTMETER		ELEMENT WITH DYNAMIC INPUT		BISTABLE ELEMENT
	AMMETER		ELEMENT WITH DYNAMIC NEGATED INPUT		
			ELEMENT WITH INHIBITING INPUT		

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		GRAPHICAL SYMBOLS FOR DIAGRAMS		<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>						
			DRAWN BY <u>RIZ</u> CHECKED BY <u>JKR</u>				SAS INTERFACE PANEL +SAS I/F-1								
01	13 48	AS MANUFACTURED	DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____		S/S 8709		S-13656		INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.		REV. NO.
00	13 20	FOR APPROVAL	OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH		SAUDI ARABIA		P	C421	CD-322986		SHT	CONT.	01
REV. NO.	DATE	DESCRIPTION											012	013	

A											
	1	2	3	4	5		6	7	8	9	10
B											
C											
D											
E											
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G											





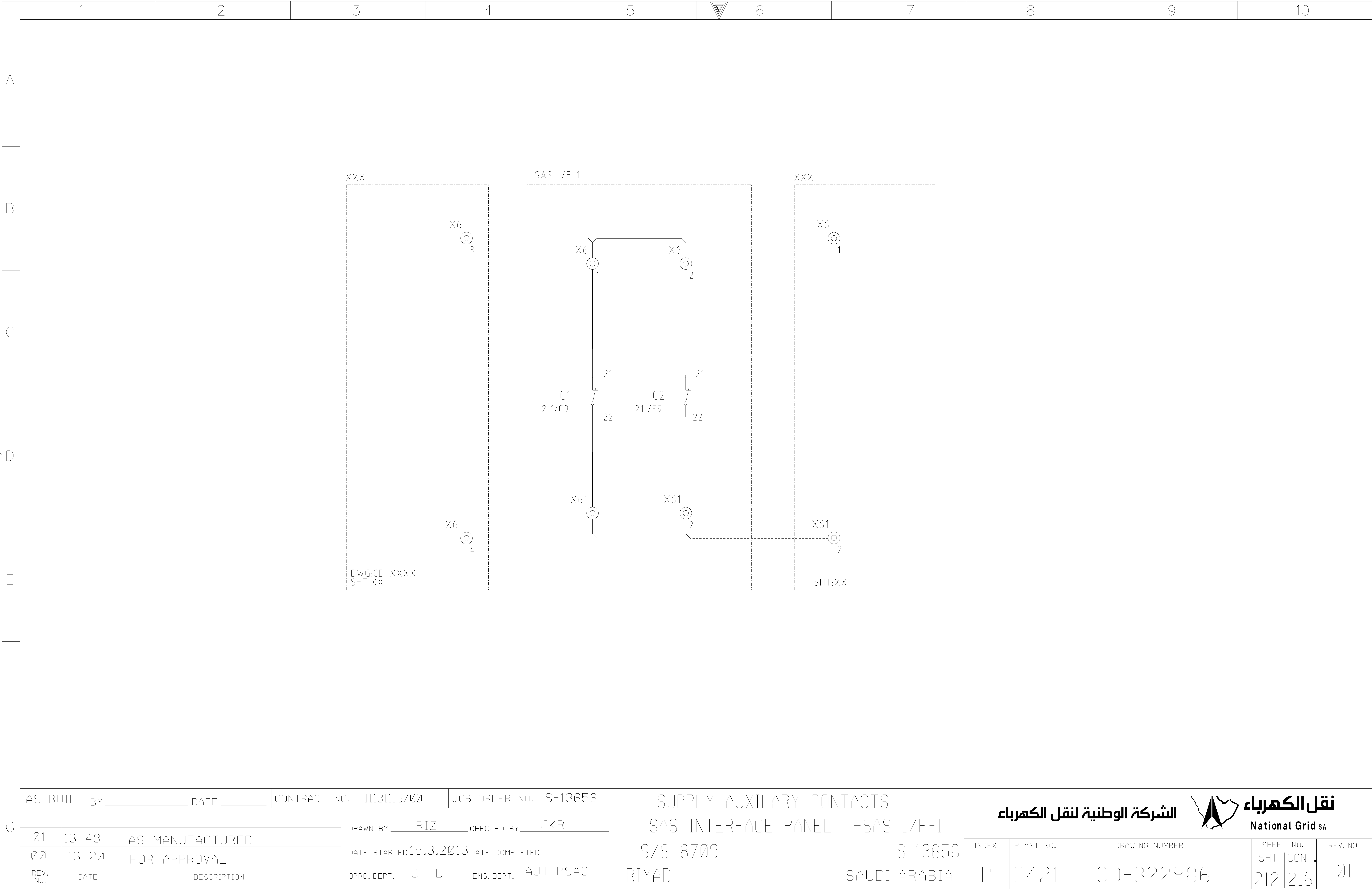
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NG/D2-D (2012/01)

DMS

VECTOR

NGD200



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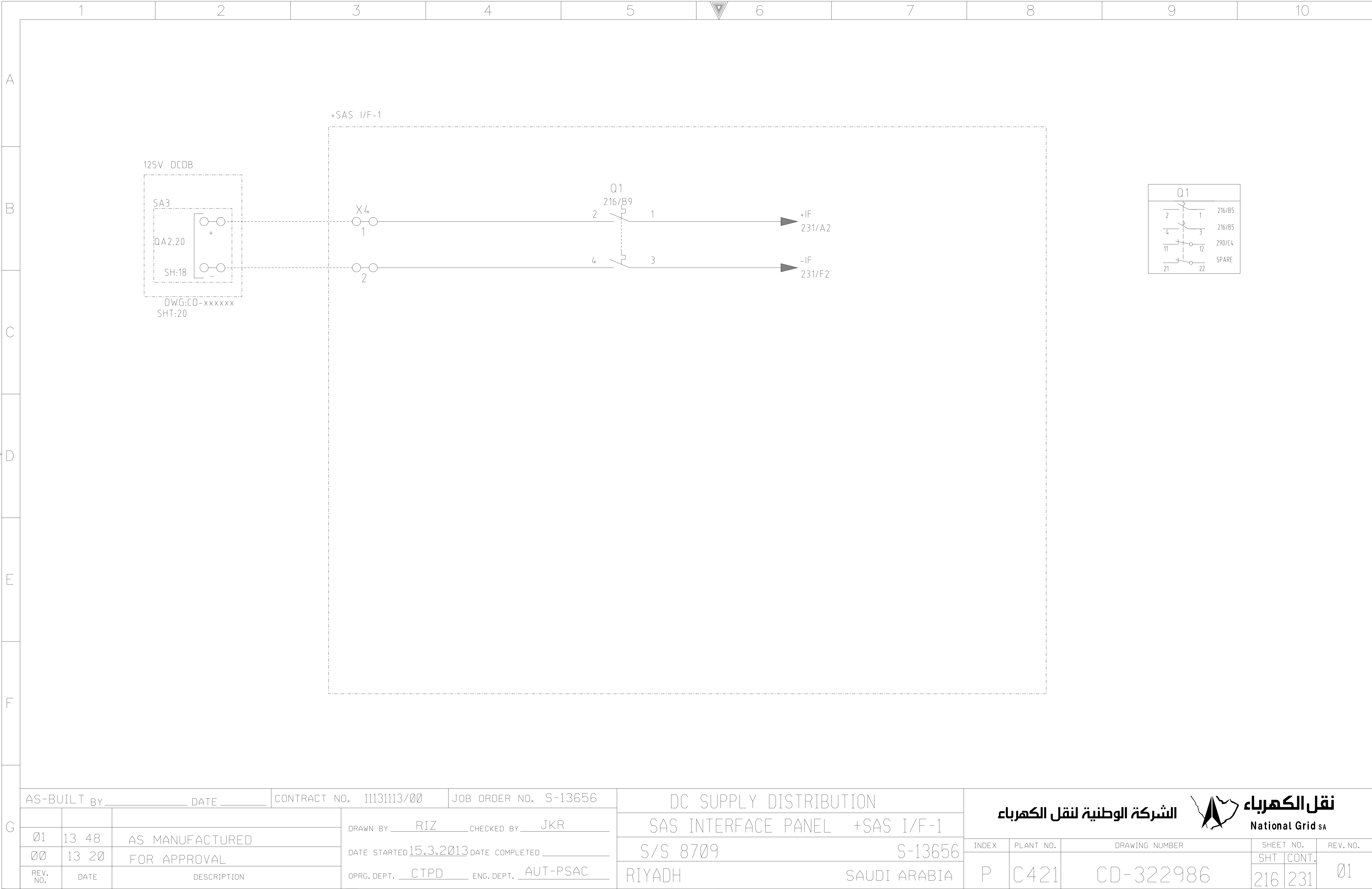


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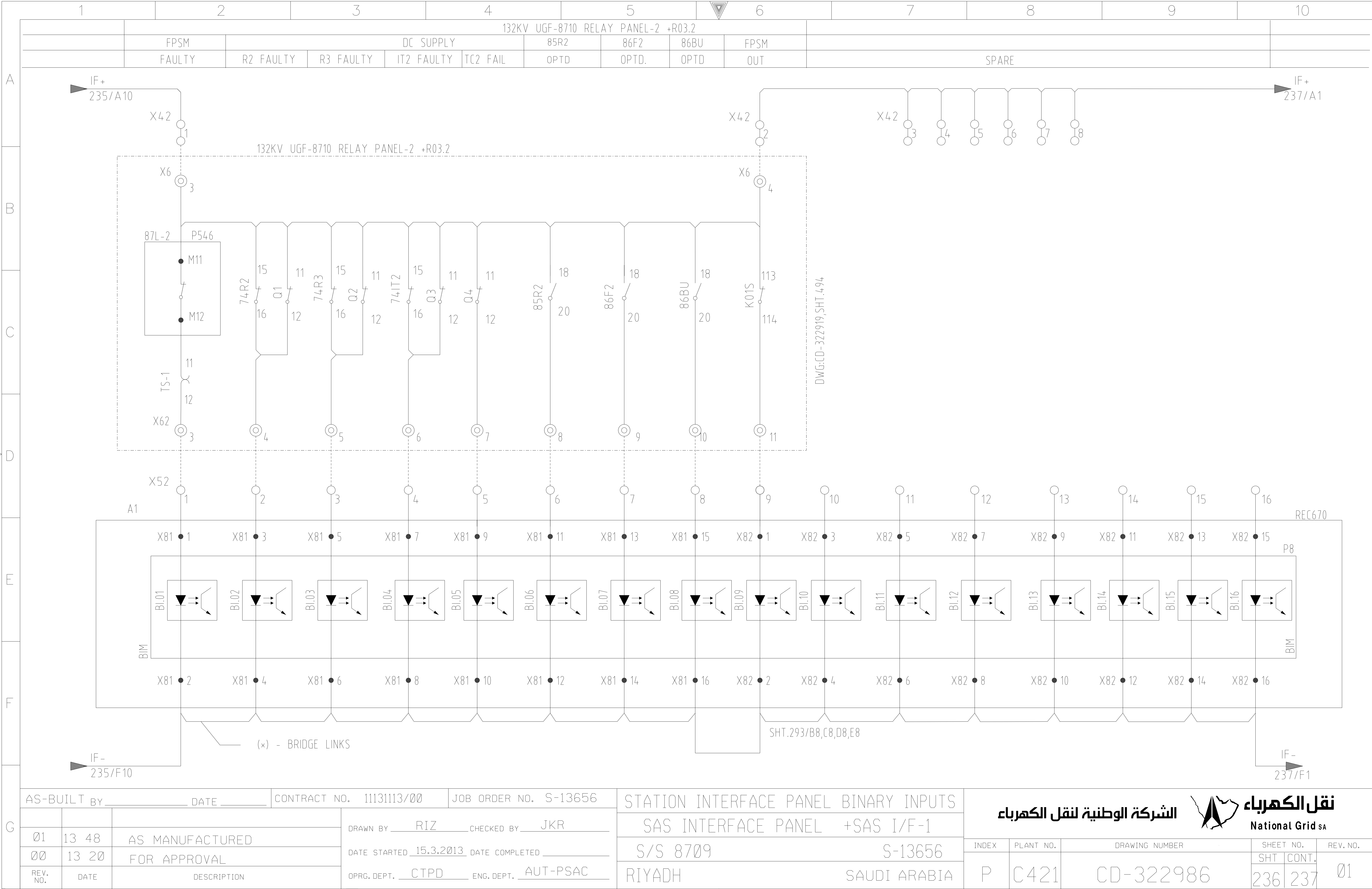
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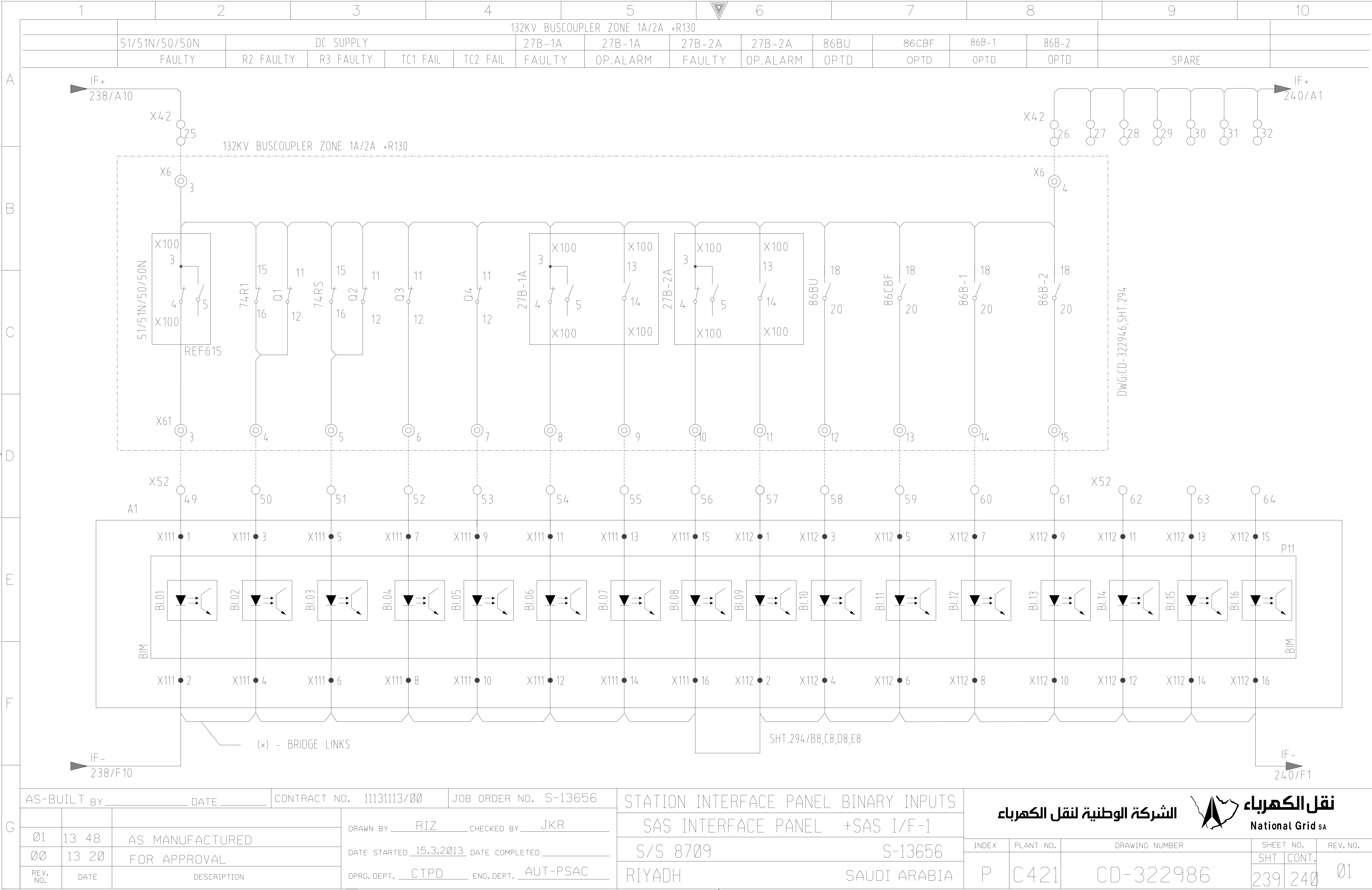
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A1

X52

49

X111

1

X111

3

X111

5

X111

7

X111

9

X111

11

X111

13

X111

15

X112

1

X112

3

X112

5

X112

7

X112

9

X112

11

X112

13

X112

15

P11

BIM

BI.01

BI.02

BI.03

BI.04

BI.05

BI.06

BI.07

BI.08

BI.09

BI.10

BI.11

BI.12

BI.13

BI.14

BI.15

BI.16

BIM

X111

2

X111

4

X111

6

X111

8

X111

10

X111

12

X111

14

X111

16

X112

2

X112

4

X112

6

X112

8

X112

10

X112

12

X112

14

X112

16

(x) - BRIDGE LINKS

SHT.294/B8,C8,D8,E8

IF-
238/F10

X52

62

X52

63

X52

64

IF-
240/F1

AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

STATION INTERFACE PANEL BINARY INPUTS

SAS INTERFACE PANEL +SAS I/F-1

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



National Grid sa

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
P	C421	CD-322986	SHT	CONT.	01
			239	240	

01

13 48

AS MANUFACTURED

00

13 20

FOR APPROVAL

REV. NO.

DATE

DESCRIPTION

DRAWN BY RIZ

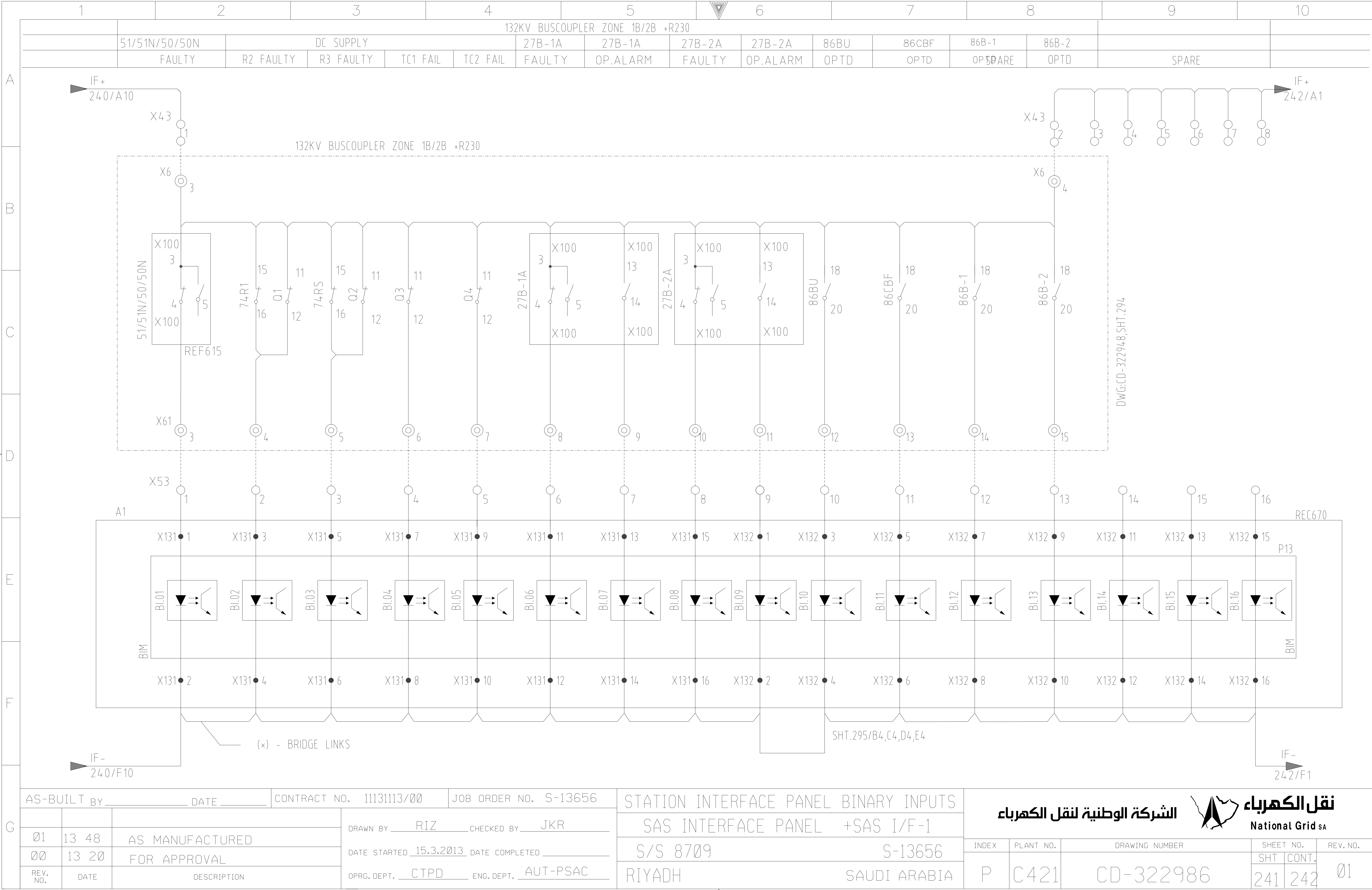
CHECKED BY JKR

DATE STARTED 15.3.2013

DATE COMPLETED

OPRG. DEPT. CTPD

ENG. DEPT. AUT-PSAC



AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

STATION INTERFACE PANEL BINARY INPUTS

SAS INTERFACE PANEL +SAS I/F-1

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

نقل الكهرباء

National Grid sa

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.

P

C421

CD-322986

241

242

01

REV. NO.

DATE

DESCRIPTION

OPRG. DEPT.

ENG. DEPT.

01

13 48

AS MANUFACTURED

CTPD

AUT-PSAC

00

13 20

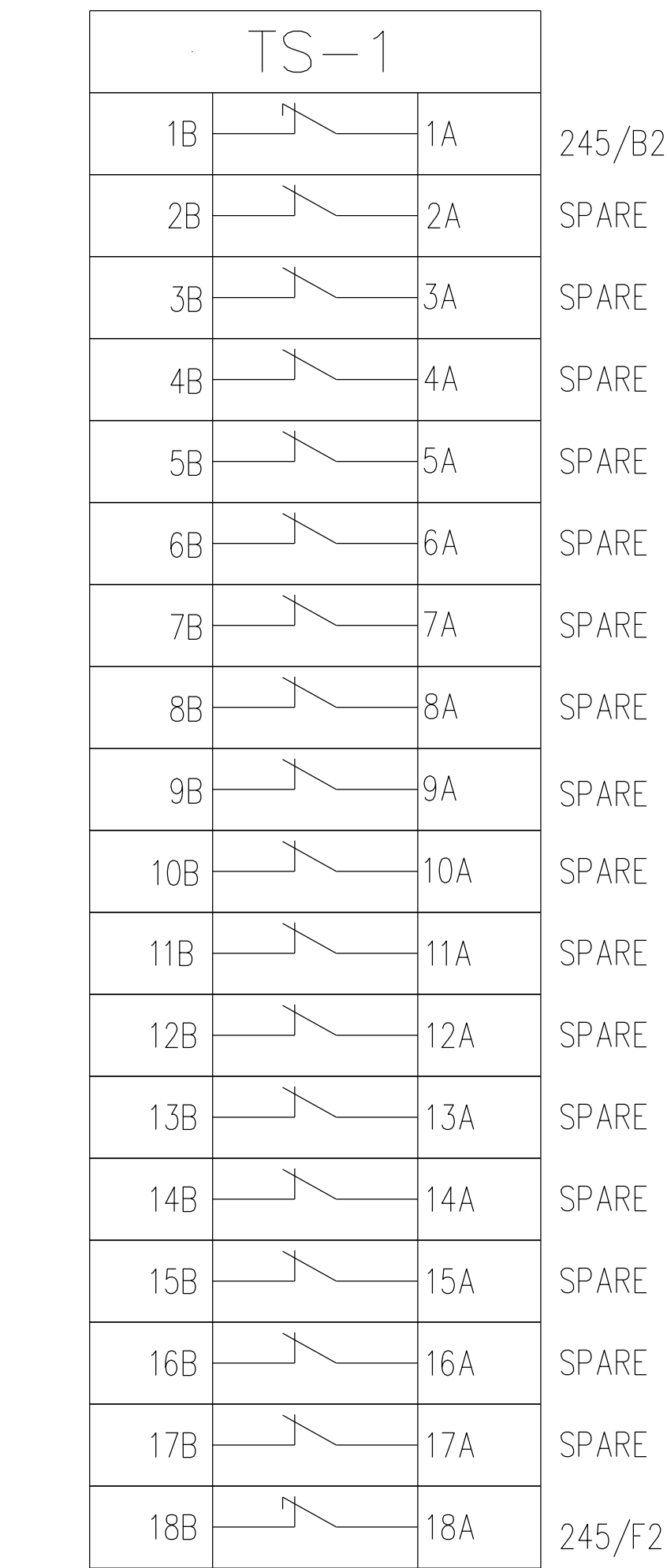
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NG/D2-D (2012/01)

DMS

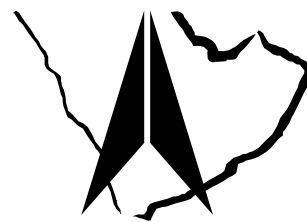
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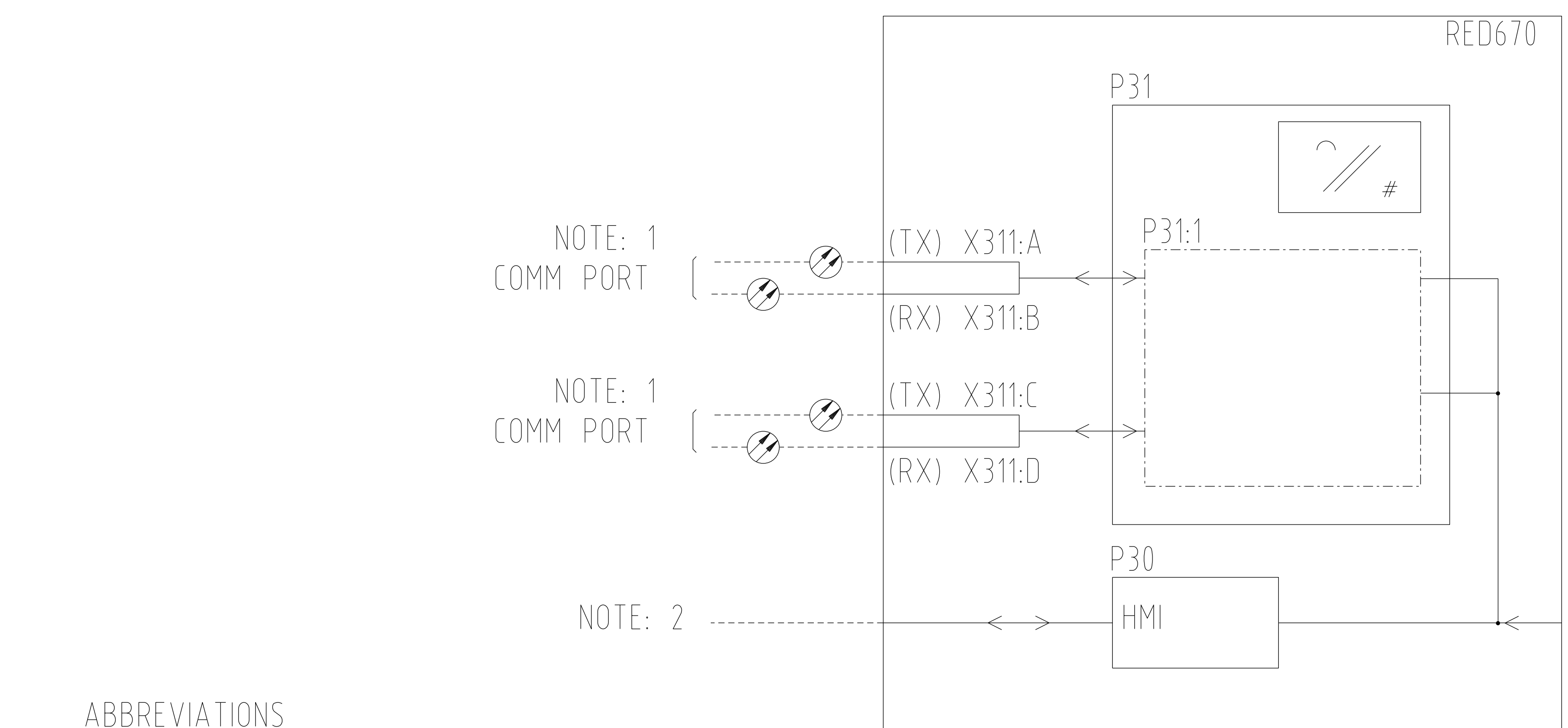
NGD200



74IF	
	245/E7
	SPARE
	290/D4
	SPARE

SPARE	
	SPARE
	SPARE
	SPARE
	SPARE

	1	2	3	4	5	6	7	8	9	10
A						IF SUPPLY FAILED	A1 FAILED			
B										
C										
D										
E										
F										
G	<div>AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656</div> <div><div><div><div>Ø1</div><div>13 48</div><div>AS MANUFACTURED</div></div><div><div>ØØ</div><div>13 20</div><div>FOR APPROVAL</div></div><div><div>REV. NO.</div><div>DATE</div><div>DESCRIPTION</div></div></div><div><div>DRAWN BY RIZ CHECKED BY JKR</div><div>DATE STARTED 15.3.2013 DATE COMPLETED _____</div><div>OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC</div></div></div>					<div>COMMON ALARM CIRCUITS</div> <div>SAS INTERFACE PANEL +SAS I/F-1</div> <div>S/S 8709 S-13656</div> <div>RIYADH SAUDI ARABIA</div>		<div><div>الشركة الوطنية لنقل الكهرباء</div><div>نقل الكهرباء National Grid sa</div></div> <div><div>INDEX</div><div>PLANT NO.</div><div>DRAWING NUMBER</div><div>SHEET NO.</div><div>REV. NO.</div></div> <div><div>P</div><div>C421</div><div>CD-322986</div><div>290291</div><div>01</div></div>		



1

2

3

4

5

6

7

8

9

10

A

B

A1

BIM_P3

REC670

LOCATION=P3

PLANT_ADAPTED_CONFIGURATION

+-----X31

1BI.01

//

------2

3BI.02

//

+-----4

5BI.03

//

------6

7BI.04

//

+-----8

9BI.05

//

------10

11BI.06

//

+-----12

13BI.07

//

------14

15BI.08

//

+-----16

X32

1BI.09

//

------2

3BI.10

//

+-----4

5BI.11

//

------6

7BI.12

//

+-----8

9BI.13

//

------10

11BI.14

//

+-----12

13BI.15

//

------14

15BI.16

//

+-----16

SHT.231/D1 TO D10

SHT.232/D1 TO D10

SHT.233/D1 TO D10

A1

BIM_P4

REC670

LOCATION=P4

PLANT_ADAPTED_CONFIGURATION

+-----X41

1BI.01

//

------2

3BI.02

//

+-----4

5BI.03

//

------6

7BI.04

//

+-----8

9BI.05

//

------10

11BI.06

//

+-----12

13BI.07

//

------14

15BI.08

//

+-----16

X42

1BI.09

//

------2

3BI.10

//

+-----4

5BI.11

//

------6

7BI.12

//

+-----8

9BI.13

//

------10

11BI.14

//

+-----12

13BI.15

//

------14

15BI.16

//

+-----16

A1

BIM_P5

REC670

LOCATION=P5

PLANT_ADAPTED_CONFIGURATION

+-----X51

1BI.01

//

------2

3BI.02

//

+-----4

5BI.03

//

------6

7BI.04

//

+-----8

9BI.05

//

------10

11BI.06

//

+-----12

13BI.07

//

------14

15BI.08

//

+-----16

X52

1BI.09

//

------2

3BI.10

//

+-----4

5BI.11

//

------6

7BI.12

//

+-----8

9BI.13

//

------10

11BI.14

//

+-----12

13BI.15

//

------14

15BI.16

//

+-----16

AS-BUILT BY_____DATE _____CONTRACT NO. 11131113/00JOB ORDER NO. S-13656

0113 48AS MANUFACTURED

0013 20FOR APPROVAL

REV. NO. DATEDESCRIPTION

DRAWN BY RIZCHECKED BY JKR

DATE STARTED 15.3.2013DATE COMPLETED _____

OPRG. DEPT. CTPDENG. DEPT. AUT-PSAC

BLOCK REFERENCE

SAS INTERFACE PANEL +SAS I/F-1

S/S 8709S-13656

RIYADHSAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

نقل الكهرباء

National Grid sa

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

SHT

CONT.

REV. NO.

P

C421

CD-322986

292

293

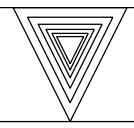

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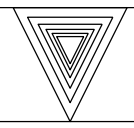
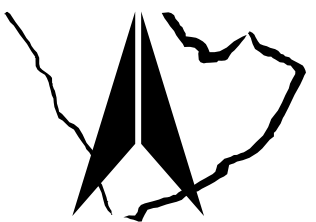
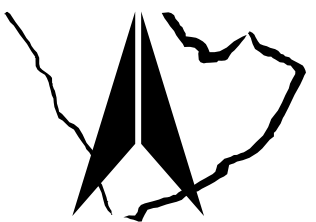
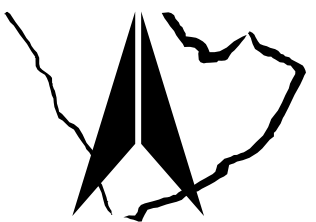
DMS

VECTOR

NG/D2-D (2012/01)

NGD200

	1	2	3	4	5		6	7	8	9	10	
A	A1											
BINARY INPUT CARD												
B	A1BIM P6 REC670											
	LOCATION=P6 PLANT ADAPTED CONFIGURATION											
C	SHT.234/D1 TO D10	+-----X61										
		------1BI.01//										
		+-----2BI.02//										
		------3BI.03//										
		+-----4BI.04//										
		------5BI.05//										
		+-----6BI.06//										
		------7BI.07//										
		+-----8BI.08//										
		------9BI.09//										
		+-----10BI.10//										
		------11BI.11//										
		+-----12BI.12//										
		------13BI.13//										
		+-----14BI.14//										
		D	SHT.235/D1 TO D10	+-----X62								
------1BI.09//												
+-----2BI.10//												
------3BI.11//												
+-----4BI.12//												
------5BI.13//												
+-----6BI.14//												
------7BI.15//												
+-----8BI.16//												
------9BI.17//												
+-----10BI.18//												
------11BI.19//												
+-----12BI.20//												
------13BI.21//												
+-----14BI.22//												
E	SHT.236/D1 TO D10			+-----X71								
		------1BI.01//										
		+-----2BI.02//										
		------3BI.03//										
		+-----4BI.04//										
		------5BI.05//										
		+-----6BI.06//										
		------7BI.07//										
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		+-----10BI.10//										
		------11BI.11//										
		+-----12BI.12//										
		------13BI.13//										
		+-----14BI.14//										
		F	SHT.237/D1 TO D10	+-----X72								
------1BI.09//												
+-----2BI.10//												
------3BI.11//												
+-----4BI.12//												
------5BI.13//												
+-----6BI.14//												
------7BI.15//												
+-----8BI.16//												
------9BI.17//												
+-----10BI.18//												
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+-----12BI.20//												
------13BI.21//												
+-----14BI.22//												
G	AS-BUILT BY_____DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		BLOCK REFERENCE				 نقل الكهرباء National Grid sa
	DRAWN BY _____ RIZ _____ CHECKED BY _____ JKR		DATE STARTED 15.3.2013 DATE COMPLETED _____		SAS INTERFACE PANEL +SAS I/F-1		S/S 8709 S-13656					
	REV. NO.		DATE		DESCRIPTION		OPRG. DEPT. _____ CTPD _____ ENG. DEPT. _____ AUT-PSAC		RIYADH SAUDI ARABIA		INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.	
	01 13 48		AS MANUFACTURED						P C421 CD-322986		293 294 01	

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AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00			JOB ORDER NO. S-13656			BLOCK REFERENCE		<div>الشركة الوطنية لنقل الكهرباء</div> <div> نقل الكهرباء National Grid sa</div>																																																																													
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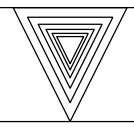
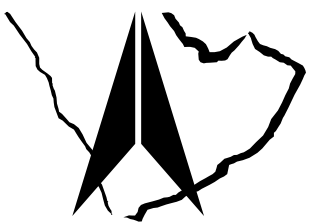
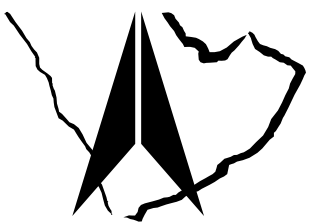
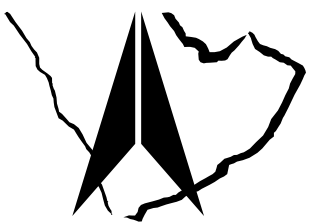
BINARY INPUT CARD

A1				BIM P9			
				REC670			
				LOCATION=P9			
				PLANT ADAPTED CONFIGURATION			
X91							
1		BI.01		//			
2				//			
3		BI.02		//			
4							
5		BI.03		//			
6							
7		BI.04		//			
8							
9		BI.05		//			
10							
11		BI.06		//			
12							
13		BI.07		//			
14							
15		BI.08		//			
16							
X92							
1		BI.09		//			
2				//			
3		BI.10		//			
4							
5		BI.11		//			
6							
7		BI.12		//			
8							
9		BI.13		//			
10							
11		BI.14		//			
12							
13		BI.15		//			
14							
15		BI.16		//			
16							

A1				BIM P10			
				REC670			
				LOCATION=P10			
				PLANT ADAPTED CONFIGURATION			
X101							
1		BI.01		//			
2							
3		BI.02		//			
4							
5		BI.03		//			
6							
7		BI.04		//			
8							
9		BI.05		//			
10							
11		BI.06		//			
12							
13		BI.07		//			
14							
15		BI.08		//			
16							
X102							
1		BI.09		//			
2							
3		BI.10		//			
4							
5		BI.11		//			
6							
7		BI.12		//			
8							
9		BI.13		//			
10							
11		BI.14		//			
12							
13		BI.15		//			
14							
15		BI.16		//			
16							

A1				BIM P11	
				REC670	
				LOCATION=P11	
				PLANT ADAPTED CONFIGURATION	
SHT.239/D1 TO D10	+ -----	X111			
	- -----	1	BI.01	//	
	+ -----	2			
	- -----	3	BI.02	//	
	+ -----	4			
	- -----	5	BI.03	//	
	+ -----	6			
	- -----	7	BI.04	//	
	+ -----	8			
	- -----	9	BI.05	//	
	+ -----	10			
	- -----	11	BI.06	//	
	+ -----	12			
	- -----	13	BI.07	//	
	+ -----	14			
	- -----	15	BI.08	//	
	16				
	+ -----	X112			
	- -----	1	BI.09	//	
	+ -----	2			
	- -----	3	BI.10	//	
	+ -----	4			
	- -----	5	BI.11	//	
	+ -----	6			
	- -----	7	BI.12	//	
	+ -----	8			
	- -----	9	BI.13	//	
	+ -----	10			
	- -----	11	BI.14	//	
	+ -----	12			
	- -----	13	BI.15	//	
	+ -----	14			
	- -----	15	BI.16	//	
	16				

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AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00			JOB ORDER NO. S-13656			BLOCK REFERENCE		<div>الشركة الوطنية لنقل الكهرباء</div> <div> نقل الكهرباء National Grid sa</div>																																																	
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			DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____			S/ S 8709		S-13656		SHT	CONT.																																																	
			OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>			RIYADH		SAUDI ARABIA		295	296																																																	

BINARY INPUT CARD

A1

A1

BIM P12
REC670

LOCATION=P12

PLANT ADAPTED
CONFIGURATION

+ -----	X121			
- -----	1	Bl.01	//	
+ -----	2	Bl.02	//	
- -----	3	Bl.03	//	
+ -----	4	Bl.04	//	
- -----	5	Bl.05	//	
+ -----	6	Bl.06	//	
- -----	7	Bl.07	//	
+ -----	8	Bl.08	//	
- -----	9	Bl.09	//	
+ -----	10	Bl.10	//	
- -----	11	Bl.11	//	
+ -----	12	Bl.12	//	
- -----	13	Bl.13	//	
+ -----	14	Bl.14	//	
- -----	15	Bl.15	//	
+ -----	16	Bl.16	//	

A1

BIM P13
REC670

LOCATION=P13

PLANT ADAPTED
CONFIGURATION

+ -----	X131			
- -----	1	Bl.01	//	
+ -----	2	Bl.02	//	
- -----	3	Bl.03	//	
+ -----	4	Bl.04	//	
- -----	5	Bl.05	//	
+ -----	6	Bl.06	//	
- -----	7	Bl.07	//	
+ -----	8	Bl.08	//	
- -----	9	Bl.09	//	
+ -----	10	Bl.10	//	
- -----	11	Bl.11	//	
+ -----	12	Bl.12	//	
- -----	13	Bl.13	//	
+ -----	14	Bl.14	//	
- -----	15	Bl.15	//	
+ -----	16	Bl.16	//	

A1

BIM P14
REC670

LOCATION=P14

PLANT ADAPTED
CONFIGURATION

+ -----	X141			
- -----	1	Bl.01	//	
+ -----	2	Bl.02	//	
- -----	3	Bl.03	//	
+ -----	4	Bl.04	//	
- -----	5	Bl.05	//	
+ -----	6	Bl.06	//	
- -----	7	Bl.07	//	
+ -----	8	Bl.08	//	
- -----	9	Bl.09	//	
+ -----	10	Bl.10	//	
- -----	11	Bl.11	//	
+ -----	12	Bl.12	//	
- -----	13	Bl.13	//	
+ -----	14	Bl.14	//	
- -----	15	Bl.15	//	
+ -----	16	Bl.16	//	

SHT.240/D1 TO D10

SHT.241/D1 TO D10

SHT.242/D1 TO D10

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NG/D2-D (2012/01)

DMS

VECTOR

NGD200

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PROTN.</td></tr><tr><td>211/A3</td><td>1</td><td></td><td></td><td></td><td>1</td><td>231/D1</td><td>1</td><td></td><td></td><td></td><td>1</td><td>234/D3</td><td>51</td><td></td><td></td><td></td><td>51</td><td>231/A2</td><td>1</td><td></td><td></td><td></td><td>1</td><td>236/D1</td><td>1</td><td></td><td></td><td></td><td>1</td><td>239/D3</td><td>51</td><td></td><td></td><td></td><td>51</td></tr><tr><td>211/B3</td><td>2</td><td></td><td></td><td></td><td>2</td><td>231/D2</td><td>2</td><td></td><td></td><td></td><td>2</td><td>234/D3</td><td>52</td><td></td><td></td><td></td><td>52</td><td>231/A8</td><td>2</td><td></td><td></td><td></td><td>2</td><td>236/D2</td><td>2</td><td></td><td></td><td></td><td>2</td><td>239/D3</td><td>52</td><td></td><td></td><td></td><td>52</td></tr><tr><td>211/A3</td><td>3</td><td></td><td></td><td></td><td>3</td><td>231/D3</td><td>3</td><td></td><td></td><td></td><td>3</td><td>234/D4</td><td>53</td><td></td><td></td><td></td><td>53</td><td>231/A8</td><td>3</td><td></td><td></td><td></td><td>3</td><td>236/D3</td><td>3</td><td></td><td></td><td></td><td>3</td><td>239/D4</td><td>53</td><td></td><td></td><td></td><td>53</td></tr><tr><td>211/B3</td><td>4</td><td></td><td></td><td></td><td>4</td><td>231/D4</td><td>4</td><td></td><td></td><td></td><td>4</td><td>234/D5</td><td>54</td><td></td><td></td><td></td><td>54</td><td>231/A9</td><td>4</td><td></td><td></td><td></td><td>4</td><td>236/D4</td><td>4</td><td></td><td></td><td></td><td>4</td><td>239/D4</td><td>54</td><td></td><td></td><td></td><td>54</td></tr><tr><td>211/B3</td><td>5</td><td></td><td></td><td></td><td>5</td><td>231/D4</td><td>5</td><td></td><td></td><td></td><td>5</td><td>234/D5</td><td>55</td><td></td><td></td><td></td><td>55</td><td>231/A9</td><td>5</td><td></td><td></td><td></td><td>5</td><td>236/D4</td><td>5</td><td></td><td></td><td></td><td>5</td><td>239/D5</td><td>55</td><td></td><td></td><td></td><td>55</td></tr><tr><td>211/C3</td><td>6</td><td></td><td></td><td></td><td>6</td><td>231/D5</td><td>6</td><td></td><td></td><td></td><td>6</td><td>234/D6</td><td>56</td><td></td><td></td><td></td><td>56</td><td>231/A9</td><td>6</td><td></td><td></td><td></td><td>6</td><td>236/D5</td><td>6</td><td></td><td></td><td></td><td>6</td><td>239/D5</td><td>56</td><td></td><td></td><td></td><td>56</td></tr><tr><td>211/B3</td><td>7</td><td></td><td></td><td></td><td>7</td><td>231/D5</td><td>7</td><td></td><td></td><td></td><td>7</td><td>234/D6</td><td>57</td><td></td><td></td><td></td><td>57</td><td>231/A9</td><td>7</td><td></td><td></td><td></td><td>7</td><td>236/D5</td><td>7</td><td></td><td></td><td></td><td>7</td><td>239/D6</td><td>57</td><td></td><td></td><td></td><td>57</td></tr><tr><td>211/C3</td><td>8</td><td></td><td></td><td></td><td>8</td><td>231/D6</td><td>8</td><td></td><td></td><td></td><td>8</td><td>234/D7</td><td>58</td><td></td><td></td><td></td><td>58</td><td>231/A9</td><td>8</td><td></td><td></td><td></td><td>8</td><td>236/D6</td><td>8</td><td></td><td></td><td></td><td>8</td><td>239/D6</td><td>58</td><td></td><td></td><td></td><td>58</td></tr><tr><td>SPARE</td><td>9</td><td></td><td></td><td></td><td>9</td><td>231/D6</td><td>9</td><td></td><td></td><td></td><td>9</td><td>234/D8</td><td>59</td><td></td><td></td><td></td><td>59</td><td>232/A2</td><td>9</td><td></td><td></td><td></td><td>9</td><td>236/D6</td><td>9</td><td></td><td></td><td></td><td>9</td><td>239/D7</td><td>59</td><td></td><td></td><td></td><td>59</td></tr><tr><td>SPARE</td><td>10</td><td></td><td></td><td></td><td>10</td><td>231/D7</td><td>10</td><td></td><td></td><td></td><td>10</td><td>234/D8</td><td>60</td><td></td><td></td><td></td><td>60</td><td>232/A8</td><td>10</td><td></td><td></td><td></td><td>10</td><td>236/D7</td><td>10</td><td></td><td></td><td></td><td>10</td><td>239/D8</td><td>60</td><td></td><td></td><td></td><td>60</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>231/D7</td><td>11</td><td></td><td></td><td></td><td>11</td><td>234/D8</td><td>61</td><td></td><td></td><td></td><td>61</td><td>232/A8</td><td>11</td><td></td><td></td><td></td><td>11</td><td>236/D7</td><td>11</td><td></td><td></td><td></td><td>11</td><td>239/D8</td><td>61</td><td></td><td></td><td></td><td>61</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>231/D8</td><td>12</td><td></td><td></td><td></td><td>12</td><td>234/D9</td><td>62</td><td></td><td></td><td></td><td>62</td><td>232/A8</td><td>12</td><td></td><td></td><td></td><td>12</td><td>236/D8</td><td>12</td><td></td><td></td><td></td><td>12</td><td>239/D9</td><td>62</td><td></td><td></td><td></td><td>62</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>231/D8</td><td>13</td><td></td><td></td><td></td><td>13</td><td>234/D9</td><td>63</td><td></td><td></td><td></td><td>63</td><td>232/A9</td><td>13</td><td></td><td></td><td></td><td>13</td><td>236/D8</td><td>13</td><td></td><td></td><td></td><td>13</td><td>239/D9</td><td>63</td><td></td><td></td><td>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REFERENCE		X3 AC CKT.		INTERNAL REFERENCE		X51 CONTROL & PROTN.		INTERNAL REFERENCE		X51 CONTROL & PROTN.		INTERNAL REFERENCE		X41 DC CKTS.		INTERNAL REFERENCE		X52 CONTROL & PROTN.		INTERNAL REFERENCE		X52 CONTROL & PROTN.		211/A3	1				1	231/D1	1				1	234/D3	51				51	231/A2	1				1	236/D1	1				1	239/D3	51				51	211/B3	2				2	231/D2	2				2	234/D3	52				52	231/A8	2				2	236/D2	2				2	239/D3	52				52	211/A3	3				3	231/D3	3				3	234/D4	53				53	231/A8	3				3	236/D3	3				3	239/D4	53				53	211/B3	4				4	231/D4	4				4	234/D5	54				54	231/A9	4				4	236/D4	4				4	239/D4	54				54	211/B3	5				5	231/D4	5				5	234/D5	55				55	231/A9	5				5	236/D4	5				5	239/D5	55				55	211/C3	6				6	231/D5	6				6	234/D6	56				56	231/A9	6				6	236/D5	6				6	239/D5	56				56	211/B3	7				7	231/D5	7				7	234/D6	57				57	231/A9	7				7	236/D5	7				7	239/D6	57				57	211/C3	8				8	231/D6	8				8	234/D7	58				58	231/A9	8				8	236/D6	8				8	239/D6	58				58	SPARE	9				9	231/D6	9				9	234/D8	59				59	232/A2	9				9	236/D6	9				9	239/D7	59				59	SPARE	10				10	231/D7	10				10	234/D8	60				60	232/A8	10				10	236/D7	10				10	239/D8	60				60							231/D7	11				11	234/D8	61				61	232/A8	11				11	236/D7	11				11	239/D8	61				61							231/D8	12				12	234/D9	62				62	232/A8	12				12	236/D8	12				12	239/D9	62				62							231/D8	13				13	234/D9	63				63	232/A9	13				13	236/D8	13				13	239/D9	63				63							231/D9	14				14	234/D10	64				64	232/A9	14			
	INTERNAL REFERENCE		X3 AC CKT.		INTERNAL REFERENCE		X51 CONTROL & PROTN.		INTERNAL REFERENCE		X51 CONTROL & PROTN.		INTERNAL REFERENCE		X41 DC CKTS.		INTERNAL REFERENCE		X52 CONTROL & PROTN.		INTERNAL REFERENCE		X52 CONTROL & PROTN.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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211/B3	2				2	231/D2	2				2	234/D3	52				52	231/A8	2				2	236/D2	2				2	239/D3	52				52																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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211/B3	4				4	231/D4	4				4	234/D5	54				54	231/A9	4				4	236/D4	4				4	239/D4	54				54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
211/B3	5				5	231/D4	5				5	234/D5	55				55	231/A9	5				5	236/D4	5				5	239/D5	55				55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
211/C3	6				6	231/D5	6				6	234/D6	56				56	231/A9	6				6	236/D5	6				6	239/D5	56				56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
211/B3	7				7	231/D5	7				7	234/D6	57				57	231/A9	7				7	236/D5	7				7	239/D6	57				57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
211/C3	8				8	231/D6	8				8	234/D7	58				58	231/A9	8				8	236/D6	8				8	239/D6	58				58																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
SPARE	9				9	231/D6	9				9	234/D8	59				59	232/A2	9				9	236/D6	9				9	239/D7	59				59																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
SPARE	10				10	231/D7	10				10	234/D8	60				60	232/A8	10				10	236/D7	10				10	239/D8	60				60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
						231/D7	11				11	234/D8	61				61	232/A8	11				11	236/D7	11				11	239/D8	61				61																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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A	INTERNAL REFERENCE		X42 DC CKTS.		INTERNAL REFERENCE		X53 CONTROL & PROTN.		INTERNAL REFERENCE		X53 CONTROL & PROTN.		INTERNAL REFERENCE		X43 DC CKTS.		INTERNAL REFERENCE		X4 DC CKTS.		REFERENCE		X61 ALM. CKT.	
	236/A2	1	236/A8	2	241/D1	1	241/D2	2	244/D3	51	244/D3	52	241/A2	1	216/B3	1	212/E5	1	216/B3	2	212/E5	2	290/E5	3
B	236/A8	3	236/A8	4	241/D3	3	241/D3	4	244/D4	53	244/D4	54	241/A8	3	SPARE	3	290/E6	4	SPARE	4	SPARE	5	SPARE	5
	236/A9	5	236/A9	6	241/D4	5	241/D4	6	244/D5	55	244/D5	56	241/A9	5	SPARE	5	SPARE	6	SPARE	6	SPARE	7	SPARE	7
	236/A9	7	236/A9	8	241/D5	7	241/D5	8	244/D6	57	244/D6	58	241/A9	7	SPARE	7	SPARE	8	SPARE	8	SPARE	9	SPARE	9
	236/A9	8	237/A2	9	241/D6	8	241/D6	9	244/D7	59	244/D7	60	242/A2	9	SPARE	9	SPARE	9	SPARE	10	SPARE	10	SPARE	11
	237/A8	10	237/A8	11	241/D7	10	241/D7	11	244/D8	61	244/D8	62	242/A8	11	SPARE	11	SPARE	11	SPARE	12	SPARE	12	SPARE	13
	237/A8	12	237/A8	13	241/D8	12	241/D8	13	244/D9	63	244/D9	64	242/A8	12	SPARE	12	SPARE	12	SPARE	13	SPARE	13	SPARE	14
	237/A9	14	237/A9	15	241/D9	14	241/D9	15	SPARE	65	SPARE	66	242/A9	14	SPARE	14	SPARE	14	SPARE	15	SPARE	15	SPARE	16
	237/A9	16	237/A9	17	241/D10	16	241/D10	17	SPARE	67	SPARE	68	242/A9	16	SPARE	16	SPARE	16	SPARE	17	SPARE	17	SPARE	18
	238/A2	17	238/A6	18	242/D2	17	242/D2	18	SPARE	69	SPARE	70	243/A2	17	SPARE	17	SPARE	17	SPARE	18	SPARE	18	SPARE	19
	238/A7	19	238/A7	20	242/D3	19	242/D3	20	SPARE	71	SPARE	72	243/A7	19	SPARE	19	SPARE	19	SPARE	20	SPARE	20	SPARE	21
	238/A7	20	238/A8	21	242/D4	20	242/D4	21	SPARE	73	SPARE	74	243/A8	20	SPARE	20	SPARE	20	SPARE	21	SPARE	21	SPARE	22
	238/A8	22	238/A8	23	242/D5	22	242/D5	23	SPARE	75	SPARE	76	243/A8	22	SPARE	22	SPARE	22	SPARE	23	SPARE	23	SPARE	24
C	238/A8	24	239/A2	25	242/D6	24	242/D6	25	SPARE	77	SPARE	78	243/A8	24	SPARE	24	SPARE	24	SPARE	25	SPARE	25	SPARE	26
	239/A6	26	239/A6	27	242/D7	26	242/D7	27	SPARE	79	SPARE	80	244/A2	26	SPARE	26	SPARE	26	SPARE	27	SPARE	27	SPARE	28
	239/A7	28	239/A7	29	242/D8	28	242/D8	29	SPARE	81	SPARE	82	244/A7	28	SPARE	28	SPARE	28	SPARE	29	SPARE	29	SPARE	30
	239/A8	30	239/A8	31	242/D9	30	242/D9	31	SPARE	83	SPARE	84	244/A8	30	SPARE	30	SPARE	30	SPARE	31	SPARE	31	SPARE	32
	239/A8	32	240/A2	33	242/D10	32	242/D10	33	SPARE	85	SPARE	86	244/A8	32	SPARE	32	SPARE	32	SPARE	33	SPARE	33	SPARE	34
	240/A2	34	240/A6	35	243/D2	34	243/D2	35	SPARE	87	SPARE	88	235/A2	34	SPARE	34	SPARE	34	SPARE	35	SPARE	35	SPARE	36
	240/A6	36	240/A7	37	243/D3	36	243/D3	37	SPARE	89	SPARE	90	235/A7	36	SPARE	36	SPARE	36	SPARE	37	SPARE	37	SPARE	38
	240/A7	38	240/A8	39	243/D																			